

MASTS Annual Science Meeting 2024

“Science, Sustainability and Society – valuing and protecting our marine systems”

Tuesday 5th – Thursday 7th November 2024

Technology & Innovation Centre, University of Strathclyde, Glasgow

Virtual ticket holders – talks from the main Auditorium (Auditoria B/C) will be live streamed on Tuesday 5th & Wednesday 6th Dec. If you have bought a virtual ticket, a livestream link will be sent to you in advance of the event. No recordings will be made available after the event.

Day 1: Tuesday 5th November 2024

- 09.00-09.30 Coffee and Registration
- 09.30-11.00 **Opening of MASTS ASM and Plenary talks** in the Main Auditorium (Auditoria B/C).
- 09.30-09.40 **MASTS ASM Opening and welcome by Prof David Paterson** (MASTS Executive Director) in Main Auditorium (Auditoria B/C).
- 09.40-10.05 **Invited speaker: Dr Michelle Jackson** (University of Oxford) in the Main Auditorium (Auditoria B/C). **“Understanding and Mitigating the Dual Threats of Warming and Pollution”**
- Aquatic ecosystems face threats from both global stressors, such as climate change, and local stressors, such as pollution. This presentation will explore the increasing body of evidence on how these stressors interact, drawing from case studies in intertidal, river, and ocean environments conducted in my research. I will illustrate how understanding these interactions can enhance the management and conservation of aquatic ecosystems by providing critical insights for policymakers. Additionally, I will identify current knowledge gaps and propose future research directions to advance our understanding of multiple stressor impacts on marine and freshwater systems.
- 10.05-10.35 Prof John Baxter and Dr Jenni Kakkonen (Orkney Islands Council) **“Fifty years and counting – Marine monitoring in Orkney”**.

The Marine Environmental Unit (MEU) of Orkney Islands Council (originally known as the Orkney Marine Biology Unit) was established in 1974. Its original purpose was to set-up a biological monitoring programme to assess the nature and extent of any intertidal environmental impacts from the operations of the oil terminal on Flotta in Scapa Flow. A series of fixed rocky and sandy shore

transects within Scapa Flow were established and monitored annually between 1974 and 1989, as well as biometric studies on key species. Sandy shore transects were restarted in either 2002 and 2006 and rocky shore transects in 2016.

The scope of the work of the MEU has expanded over the years and in addition to the continuation of the transects, there is now a ballast water treatment testing programme for all tankers entering Scapa Flow and wishing to discharge ballast water. In addition, there is a marine non-native species monitoring programme and a suite of MarClim sites (as part of the broader Scotland/UK-wide network of sites) that are sampled on a regular basis.

The longevity of elements of this programme of work has resulted in a much better understanding of the natural dynamics of intertidal communities around Orkney but also provided originally unforeseen potential insights into climate change driven changes in species distribution and abundance, highlighting the value of such long-term monitoring programmes.

10.35-11.00 **Invited speaker: Prof Mark Inall** (Chief Scientific Advisor Marine, Scottish Government). “Title TBC”

11.00-11.45 **Coffee break, networking and [Poster session 1](#)**

Time	On Level 2			On Level 3		
	Screen 1	Screen 2	Screen 3	Screen 4	Screen 5	Screen 6
11.05-11.30	Katarzyna Zejc	Emma Beaton		Sacha Forbes-Leith	Haleigh Jorgeson	Kelly James

Paper posters on Level 2

Time	Paper Poster	Paper Poster	Paper Poster	Paper Poster
11.05-11.30	Kay Ihle	Jude Wilson	Andrada Opris	Alice Sinclair

- Katarzyna Zejc (University of Aberdeen) - Epigenetic mechanisms in diel vertical migration and diapause in copepod *Calanus finmarchicus*.
- Emma Beaton (Marine Directorate, Scottish Government) - Ecosystem consequences of changes to habitats and implications for a net gain energy approach
- Sacha Forbes-Leith (SAE Renewables Ltd) - Environmental monitoring of a utility scale tidal energy array
- Haleigh Jorgeson (University of Essex) - Impact of an offshore wind farm on benthic microbial communities in the Irish Sea
- Kelly James (NatureScot) - Assessing the resilience of Scotland’s MPA network to climate change
- Kay Ihle (SAMS) - Lighting up zooplankton: fine-scale zooplankton migration at high latitudes
- Jude Wilson (Heriot-Watt University) - Investigating supplementary feeding effects on Survival, Growth, Development, and Behaviour of field caged Tadpoles
- Andrada Opris (Edinburgh Napier University) - Provision of pollination and other ecosystem service by sustainable urban drainage systems (SUDS)

- Alice Sinclair (University of St. Andrews) - The effect of temperature-induced bleaching on the structure and material properties of tropical coral skeletons

11.45-13.15 **MASTS General Science Session 1** in the Main Auditorium (Auditoria B/C) and a **Special Session on “Scotland in the Arctic: an introduction to ScANs research”** in Auditorium A;

11.45-13.15 **Special Session on “Scotland in the Arctic: an introduction to ScANs research”** in Auditorium A. Chair: Dr Lauren McWhinnie & Dr Kate Gormley. Talks will be 10 Minutes each followed by a panel discussion and question time.

The Scottish Arctic Network (ScAN) is a community of researchers based at universities across Scotland who are united in their passion for the polar north! This session will feature some of the marine research being undertaken by ScAN colleagues; from understanding the impacts of climate change on sea ice to identifying ways we can protect marine life from emerging anthropogenic activities such as shipping. Come along and learn about the network, funds to support ECRs, our role as a regional hub for the University of the Arctic and opportunities to get involved.

Arctic Research talks

- Håkon Sandven (University of Bergen) - Sea ice decline drives strong changes in Barents Sea light availability in the last four decades
- Kate Gormley (University of Aberdeen) - Spatial analysis of tourism vessels and marine mammals in the Arctic
- Marta Santos-García (University of Edinburgh) - Is the Arctic Ocean losing Nitrogen?
- Anna Crawford (University of Stirling) - Research on Arctic Ice Islands Over the Last Century (pre-recorded talk)
- Charles Knapp (University of Strathclyde) - Food and water security risks in the receiving environments of Arctic communities from wastewater

UK/Scottish interests/funding landscape talks

- Henry (UKRI) – TBC
- Craig (Scottish Government) - TBC

11.45-13.15 **[MASTS General Science Session 1](#)** in the Main Auditorium (Auditoria B/C). Chair: TBC. Talks are 12 minutes each (plus 3 minutes for questions).

- Harry Langdale (University of Dundee) - Assessing Seabed Integrity under Increased Pressures from Offshore Windfarm Developments
- William Macdonald (Scottish Government, Marine Directorate) - Modelling the oceanographic response to offshore wind farms in stratified shelf seas
- Kieran Tierney (University of Glasgow) - A spatially explicit ecosystem model to investigate the impacts of an offshore wind farm on the West Coast of Scotland
- Emily Hague (Heriot-Watt University) - Characterising vessel traffic in Scotland's marine protected areas
- Julia Sutherland (University of St. Andrews) - Ecological Consequences of Orca Predation on Seals (ECOPredS): Predator-prey interactions of killer whales and seals in coastal Shetland
- Katherine Simpson (University of Glasgow) - Future Research Directions: Marine Net Gain and Natural Capital Markets

13.15-14.00 **Lunch** and networking. 🍽️

14.00-16.00 **Special Session on "Pitcairn Marine Research"** in Main Auditorium (Auditoria B/C) and a **Special Session on "Marine Mammals in an ocean of change"** in Auditorium A

14.00-16.00 **Special Session on "Pitcairn Marine Research"** in the Main Auditorium (Auditoria B/C). Chair: Alasdair Hamilton (Deputy Governor of the Pitcairn Islands, British Consulate General).

Pitcairn's MPA is the 3rd largest in the world, is a platinum level Blue Park Award winner, and its purity as a fully intact marine ecosystem provides an important scientific reference point in measuring the impact of climate change. The session will cover the ambition of the new Marine Science Base on Pitcairn, scientific evidence on the health of marine biodiversity through recent science expeditions and the efforts of the Pitcairn Islands Government in protecting such a large MPA, with the support of the Blue Belt Programme.

- Joanna Bluemel (CEFAS) – Science research findings.
- Murray Roberts (University of Edinburgh) on eDNA research findings and working on Pitcairn.
- Joseph Peters (MMO) on monitoring and protecting Pitcairn's MPA.
- Live feed from Pitcairn (Michele Christian, Melva Evans and Lindsay Thompson) on the Marine Science Base, and developing Pitcairn's environmental profile.

14.00-16.00 [Special Session on “Marine Mammals in an ocean of change”](#) in Auditorium A.

Chairs: Emily Hague & Dr Carol Sparling. This session is a mix of 10-minute presentations and 5-minute speed talks.

10 Minute talks (plus 4 minutes for questions)

- Kelly Macleod (HiDef Aerial Surveying Ltd) - Remote monitoring of remote species: a case study of New Zealand’s southern right whale (*Eubalaena australis*)
- Alanna Frayne (The Whale Museum) - COVID-19 impacts on vessel trends in the Salish Sea and implications for endangered Southern Resident killer whales
- Helen Mitcheson (Cetacean Law) - Introduction to the legal framework for marine mammals in the UK and recommendations for enhancing protections through law
- Lauren Hartny-Mills (Hebridean Whale and Dolphin Trust) - Long-term site fidelity of minke whales (*Balaenoptera acutorostrata*) off the west coast of Scotland
- Tim Awbery (Scottish Association for Marine Science) - Using Dynamic Habitat Suitability Models Based on a Twenty-Year Dataset to Assess the Potential Risk of Entanglement of Minke Whales
- Ellen White & Benedict Dell (University of Southampton) - Acoustic behavioural responses of delphinid to incidental military sonar in Scottish Waters

Short (5min) speed talks

- Valentina DaCosta (Heriot-Watt University) - The role of law and policy for the conservation of humpback whales along their Southeast Pacific migration
- Sohini Dudhat (University of St Andrews) - Exploring Factors Influencing Cetacean Strandings in the Coastal Waters of Oman, Northwest Indian Ocean
- Rebecca von Hellfeld (University of Aberdeen) - Marine metal detectors – Monitoring mercury in marine mammals through skin biopsies
- Jaz Harker (HiDef Aerial Surveying Ltd) - Winter distribution of cetaceans in the Irish and Celtic Seas and implications for assessment of anthropogenic impacts
- Ian Davies (SAE Renewables Ltd) - Uncertainties facing tidal energy developments in Scotland

16.00-16.45 **Coffee break, networking and [Poster session 2](#)** ☕

Time	On Level 2			On Level 3		
	Screen 1	Screen 2	Screen 3	Screen 4	Screen 5	Screen 6
16.05-16.30	Finlay Hamilton	Theodora White		Susanna Quer	Katherine McCoy	Lorenzo Scala

- Finlay Hamilton (St Abbs Marine Station) - Ultimate Fighting Crab: Agonistic Behaviour, Dominance, and Recognition in Edible Crabs (*Cancer pagurus*)
- Theodora White (University West of Scotland) - The role of recreational marinas in facilitating the spread of invasive species
- Susanna Quer (Renewable and Ecology Group, Marine Directorate) - Comparative effects of the processing power of C-PODs and F-PODs on the detection of porpoises and dolphins
- Katherine McCoy (King's College London) - The Enigmatic Humpback Whales of the Pitcairn Islands
- Lorenzo Scala (Seiche Ltd) - Passive acoustic monitoring for marine mammal detection during offshore industry activities

Paper posters on Level 3 Mezzanine

<u>Time</u>	<u>Paper Poster</u>	<u>Paper Poster</u>
16.05-16.30	Alice Lowry	Ciaran Dolan

- Alice Lowry (HiDef Aerial Surveying Ltd) - Review of principles for identification of grey and harbour seals in Digital Video Aerial survey footage
- Ciaran Dolan (University of Exeter) - Dietary partitioning in minke whales (*Balaenoptera acutorostrata*) in the North-East Atlantic: an insight from Bayesian mixing models

16.45-18.15 **MASTS General Science Session 2** in Auditorium A and a **MASTS General Science Session 3** in the Main Auditorium (Auditoria B/C).

16.45-18.30 [MASTS General Science Session 2](#) in Auditorium A. Chair: TBC. Talks are 12 minutes each (plus 3 mins for questions).

- Charlotte Miskin-Hymas (NOC) - New ways to search for and access UK marine data
- Sabine Matallana-Surget (Stirling University) - Unlocking Marine Microbial Dynamics: Metaproteomic Approaches to Tackle Global Pollution
- Charis Hanna (University of St Andrews) - Evaluating the Feasibility of Bounding Box-Based Object Detection Methods for the Monitoring of Cliff-Nesting Birds
- Nicholas Petzinna (Environmental Research Institute) - I see you- novel AI derived imaging equations to count seabirds from camera trap data
- Christopher Pollock (UK Centre for Ecology & Hydrology) - Predicting the cumulative effects of offshore wind farms on seabird demography and consequent population viability
- Silvia Malagoli (University of Strathclyde) Modelling saithe (*Pollachius virens*) aggregation around North Sea oil and gas platforms to investigate effects on production

- Emma Tyldesley (University of Strathclyde) - Climate projections of zooplankton assemblages relevant to forage fish prey of seabirds and salmon in the Northeast Atlantic

16.45-18.30 [MASTS General Science Session 3](#) in the main Auditorium (Auditoria B/C). Chair: TBC. Talks are 12 minutes each (with 3 minutes for questions).

- Magnus Janson (Edinburgh Napier University) - Assessing associated biodiversity and status of European flat oyster beds using analysis of soundscapes, eDNA and visual survey
 - William Sanderson (Heriot-Watt University) - Everything, everywhere, all at once: where are we with European oyster restoration, and how can it move to scale?
 - Tully Osmond (Edinburgh Napier University) – Marine Parasites: Bio-indicators of Ecosystem Health
 - Greg Macmillan (University of Strathclyde) - Traditional phytoplankton samples underestimate large-cell abundances
 - Kirsten Harper (University of Edinburgh) - An eDNA Bounty: Characterising the Biodiversity of a Marine Protected Area
 - Mark Hartl (Heriot-Watt University) - Deep-sea ecotoxicology. Baseline oxidative stress in deep-sea fish
 - Colin Moffat (Robert Gordon University) - Visualizing Climate Change Impacts around Scottish Deep Seas using a StoryMap
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Day 2: Wednesday 6th November 2024

08.30-09.00 Registration and tea/coffee ☕

09.00-11.00 **Energy and Infrastructure Session** in Auditorium A; and **Special Session on “Marine Biogeochemistry”** in the Main Auditorium (Auditoria B/C).

09.00-11.00 Introduction to the new “**Energy Transition Forum**” followed by “**The future of marine research and infrastructure**” Panel discussion.

Energy Transition Forum

To combat climate change, many countries have committed to transitioning from fossil fuels to renewable technologies. Many of these new technologies are set to be located with the marine environment with large areas of development planned in seas around the UK. These developments will themselves have impacts on the marine environment and will impact other users of the marine space. The MASTS Energy Transition Forum looks to bring together experts to explore the ecological, technological and social implications of this energy transition and to expand knowledge surrounding this topic. This session at the MASTS ASM aims to introduce the forum to the wider MASTS community and promote more discussions surrounding these topics within the MASTS community.

SUT DWR Fireside Chat - The future of marine research and infrastructure

The dual crisis of climate change and biodiversity loss is and will continue to change the marine environment, increasing the risk to natural environments, communities, and industrial infrastructure. But do we have the knowledge and skills required to respond to these emergencies? This fireside chat will bring together industry and academic leaders to discuss this and questions from the audience.

09.00-11.00 **Special Session on “Marine Biogeochemistry”** in the Main Auditorium (Auditoria B/C). Chairs: Dr Alex Poulton & Dr Robyn Tuerena. 12-minute talk with 3 minutes for questions.

- Benjamin Gustafson (Heriot Watt University) - Recognizing biology in the ocean’s carbonate pump: Updating understanding of pelagic calcifier roles in production & export

- Chris Harrod (University of Glasgow) - Large-scale isotopic gradients in coastal marine environments complicate the reconstruction of ancient human diets in the arid Atacama coast of Chile
- Alex Houston (University of St Andrews) - Thermal Reactivity Predicts Bioavailability of Organic Carbon in Saltmarsh Soils
- Claire Powell (Centre for Ecology) - Ecosystem Service provision in the North Sea seabed: towards adopting natural capital approaches in subtidal benthic/sediment monitoring
- Philippa Rickard (Heriot-Watt University) - Exploring the organic composition of the Ocean's surface and its relationship with air-sea gas exchange: Insights from the 30th Atlantic Meridional Transect.
- Marta Santos-García (University of Edinburgh) - Is the Arctic Ocean losing Nitrogen?
- Elinor Spencer (Heriot Watt University) - The effect of experimental technique on the elemental content of coccolithophores
- Hugo Woodward-Rowe (University of Essex) - Organic carbon mineralisation of disturbed anthropogenically impacted shelf sediments

11.00-11.45 **Coffee break, networking and [Poster Session 3](#)**

Time	On Level 2			On Level 3		
	Screen 1	Screen 2	Screen 3	Screen 4	Screen 5	Screen 6
11.05-11.30	Alex Poulton	Nichole Marsh		Isabella Jackson	Naomi Kennon	Moritz Eichert

- Alex Poulton (Heriot Watt University) - Coccolithophore dynamics in bloom conditions in the central Iceland Basin (May - June 2024)
- Nichole Marsh (Heriot Watt University) - Expanding a global database of coccolithophore calcification rates to examine abiotic environmental drivers
- Isabella Jackson (Heriot-Watt University) - Exploring the combined impacts of climate change and pollution on stress responses in the blue mussel *Mytilus edulis*, across different life stages.
- Naomi Kennon (Heriot-Watt University) - Moving to a rough neighbourhood: can rugosity indicate biodiversity change as oyster reefs are restored?
- Moritz Eichert (Heriot-Watt University) - The effect of soak time on the size selection and harvesting pattern of Whelk pots (*Buccinum undatum*)

Paper posters on Level 2

Time	Paper Poster	Paper Poster	Paper Poster
11.05-11.30	Laura Thomson	Yuchen Wang	Thomas Baxter

- Laura Thomson (University of Strathclyde) - Honeycomb: modelling the effects of oil and gas structures on the abundance and distribution of saithe (*Pollachius virens*) in the North Sea
- Yuchen Wang (University of Glasgow) - Examining an overlooked type of beach: urban anthropogenic mixed beaches along the coastal and estuarine environment of Scotland
- Thomas Baxter (University of St. Andrews) - Hatchery reared European lobster (*Homarus gammarus*) release behaviour and impact of lobster hatchery operation

11.45-13.15 **General Science Session 4** in Auditorium A; and **General Science Session 5** in the Main Auditorium (Auditoria B/C).

11.45-13.15 [MASTS General Science Session 4](#) in Auditorium A. Chair: TBC. Talks are 12 minutes each (and 3 mins for questions).

- Rhei Ammaturo (University of Strathclyde) - King scallops in Scotland: coupling Lagrangian particle tracking and Dynamic Energy Budget theory
- Vicki Balfour (University of St Andrews) - The CatchS3ID – automated identification of species, sex and size of crustaceans
- Maria Clara Iruzun Martins (University of St Andrews) - Inferring Fishing Activity from Vessel Monitoring System (VMS) data: a comparison of conventional speed threshold (ST) methods with hidden Markov model (HMM) approaches
- Douglas Speirs (University of Strathclyde) - Spatial patterns of fishing and their potential effects on the sustainability of currently unexploited fish stocks
- Laura Thomson (University of Strathclyde) - Developing operational spatial models for Scottish Fisheries
- Andrew Davies (NatureScot) - Call for Partners. Horizon 2025: Mission - Restore Our Ocean and Waters

11.45-13.15 [MASTS General Science Session 5](#) in the Main Auditorium (Auditoria B/C). Chair: TBC. Talks are 12 minutes each (and 3 mins for questions).

- Julie Hope (University of St Andrews) - The effects of microplastics pollution on soft sediment ecosystem function under simulated 'heatwave' and 'heat spike' events
- John MacDonald (University of Glasgow) - Anthropogenic rock coasts' – formation mechanisms and implications for marine and coastal processes
- Phil Anderson (Scottish Association for Marine Science) - "ImpYak", an Autonomous Surface Vehicles for coastal marine science

- Nicola Horsburgh (University of Stirling) – Storm impacts along Scotland’s wave dominated coasts
- David Gregg (Newcastle University) - Accuracy assessment of recent global ocean tide models in coastal waters of the European North West Shelf
- Karen Alexander (Heriot Watt) – Coastal Community Wellbeing.

13.15-14.00 **Lunch** and networking opportunities 🍷

14.00-16.00 A **Special Session on “Multiple Stressors”** in Auditorium A; and a **Special Session on “Sea Lice Surveillance and Modelling”** in the Main Auditorium (Auditoria B/C).

14.00-16.00 [Special Session on “Sea Lice Surveillance and Modelling”](#) in the Main Auditorium (Auditoria B/C). Co-Chairs: Dr Sandy Murray & Dr Helena Reinhardy. Talks are 10 minutes each, plus 4 for questions.

- Andy Dale (SAMS-UHI) - What depths do sea lice larvae reach during downwelling events, and could they be drawn into semi-closed salmon farms
- Phil Gillibrand (Mowi Scotland Ltd) - Implications of Post-smolt Salmon Production for Sea Lice Numbers in Scottish Inshore Waters
- Meadhbh Moriarty (Marine Directorate, Scottish Government) - Ensemble Modelling and Uncertainty in Sea Lice Dispersal Patterns
- Alexander Murray (Marine Directorate, Scottish Government) - Optimizing policy advice from salmon lice dispersal models: the “Knowledge Strength” approach.
- Helena Reinardy (SAMS-UHI) - Local hydrodynamics driving sea lice larval distribution
- Tim Szewczyk (SAMS-UHI) - Improved sea lice forecasting through machine learning and Bayesian ensemble models
- William Waites (University of Southampton) - Infection Pressure on Fish in Cages

14.00-16.00 [Special Session on “Multiple Stressors”](#) in Auditorium A. Chair: Dr Frances Orton and Prof Karen Diele. Talks are 12 minutes each (plus 3 mins for questions).

- Khuong Dinh (University of Oslo) - Life and death of overwintering Arctic zooplankton under multiple stressors in the Anthropocene

- Susan Fitzer (University of Stirling) - Using biomineralisation responses to predict molluscan species-specific pathways for resilience to climate change.
- Catriona Harris (University of St Andrews) - Understanding the cumulative effects of multiple stressors on marine mammals – An overview of the Population Consequences of Multiple Stressors (PCoMS) project
- Angus Taylor (SAMS) - Spined over matter: resilience and regeneration in a multi-stressor ocean of warming and acidification.
- Júlia Olher (University of Sao Paulo) - Modelling the effects of climate and fishing on the ecosystem dynamics of South Mid-Atlantic Ridge islands using StrathE2E
- Elliot Sivel (University of Strathclyde) - Investigating anthropogenic intervention actions on Atlantic Salmon (*Salmo salar*) populations of the Bush River, Northern Ireland using a life cycle model
- Nele Thomsen (SAMS) - Multistress impacts of temperature and copper vary between two Arctic calanoid copepods
- Frances Orton (Heriot-Watt University) - Quantifying Levels and Intensities of Environmental Stressors in Ponds and how Stressor Intensity relates to Tadpole Body Condition

16.00-16.45 **Coffee break, networking and [Poster Session 4](#)**

Time	On Level 2			On Level 3		
	Screen 1	Screen 2	Screen 3	Screen 4	Screen 5	Screen 6
16.05-16.30	Zhaijun Lin	Corentine Rochas		Gurjameer Ramday	Emmy Cooper-Young	Evita Kypraki

- Zhaijun Lin (University of Edinburgh) - The Impacts of Personal Care Product Pollution on Seagrass (*Zostera marina*) Health
- Corentine Rochas (St Abbs Marine Station) - Cable to catshark: behavioural effects of electromagnetic fields in tank experiments
- Gurjameer Ramday (Heriot-Watt University) - Monitoring the Stress and Success of Biosecurity in Native Oyster Restoration
- Emmy Cooper-Young (Heriot-Watt University) - Site optimisation for native oyster (*Ostrea edulis*) reintroduction and its realistic application to modern day site suitability analyses
- Evita Kypraki (Heriot Watt University) - The Native Oyster's Blueprint: *Ostrea edulis* Clumps and Epifaunal Biodiversity

16.45-17.45 **[MASTS General Science Session 6](#)** in the Main Auditorium (Auditoria B/C). Chair: Prof David Paterson. Talks are 12 minutes each (and 3 mins for questions).

- Sally Rouse & Kirsty Macleod (Environmental Standards Scotland) Environmental Standards Scotland: our role in environmental scrutiny and recent marine analytical work
- Katy Hill (NOC) – Marine Science in 2040: A Science Requirements Framework for the UK’s Future Marine Research Infrastructure (FMRI)
- Wrik Mallik (University of Glasgow) - Learning underwater ocean acoustics: computational modelling, experiments, and development of AI/ML-based models
- Bee Berx (Scottish Government, Marine Directorate) - Ocean warming in Scotland’s seas – a regional analysis of temperature trends

17.45-17.55 **Conference Closing Remarks & Prize Giving** (Prof David Paterson) 🏆 ASM prizes are kindly sponsored by [IMarEST](#).

2000 **Evening Ceilidh** – we hope you can join us for a few drinks and some ceilidh dancing. This is a ticketed event and tickets can be bought as part of the registration. The venue is [Sloans](#), 108 Argyle St, Glasgow G2 8BG.

Posters

All e-posters will be available to view from any screen at any time during the ASM. Simply navigate to the menu and choose which e-poster you would like to view. Most e-poster authors will be present at their posters during a designated coffee break (names and linked abstracts above).

We also have several paper posters available to view. Paper poster authors will be present at their posters during a designated coffee break (see details above).

Poster screens and boards will be spread across Level 2 and 3. Look out for relevant signage at the event.

If you are an online attendee and there is an eposter of interest to you, please feel free to contact the author for more details.

Exhibitors

MASTS is delighted to host the following exhibitors:

- **Swift Analytical** is a distributor of life science products. Amongst our portfolio, we also distribute the Nanocollect WOLF benchtop microfluidic cell sorter which will be showcased at the meeting. It's an easy-to-use sorting tool optimised for a range of materials including stem cells, antibodies, diatoms of size up to 50um. www.swiftanalytical.com and X: @swiftanalytical.
- **Orkney Islands Council Harbour Authority, Marine Environmental Unit** - 50 years of marine monitoring in Orkney. <https://www.orkneyharbours.com/> and X: @OrkneyHarbours
- **Marine Environmental and Data Information Network (MEDIN)** - The Marine Environmental and Data Information Network (MEDIN) is the hub for UK marine data. MEDIN promotes good data management practices by providing the MEDIN discovery metadata standard, marine data guidelines, tools and an online portal. MEDIN's aim is to make UK marine data Findable, Accessible, Interoperable and Re-usable (FAIR). www.medin.org.uk and X: @MEDIN_marine
- **UHI Aquaculture Hub** - Discover the UHI Aquaculture Hub, where experts in finfish, shellfish, seaweed, and more collaborate to pioneer innovation and training in aquaculture. From environmental modelling to genetics, health and welfare to social licence, our interdisciplinary approach drives positive outcomes locally and globally. We're shaping the future of aquaculture with our cutting-edge facilities and a commitment to knowledge exchange. Web – www.uhi.ac.uk/aquaculture; Email - aquaculture@uhi.ac.uk; X - @UHIAquaculture; LinkedIn - [UHI-Aquaculture-Hub](https://www.linkedin.com/company/uhi-aquaculture-hub)
- **Aberdeen University weeHoloCam - plankton imaging & identification** - The Optics research team at University of Aberdeen, School of Engineering has developed a state-of-the-art underwater digital holographic camera system that includes an ultracompact camera, superfast hologram processor and a classifier to group the recorded images. Applications include monitoring of general and harmful plankton community. We will demonstrate the system working seamlessly in real-time. <https://www.abdn.ac.uk/engineering/people/profiles/t.thevar>
- **Shetland Oil Terminal Environmental Advisory Group (SOTEAG)**: For almost five decades SOTEAG has continued to look after the interests of the environment around Shetland's Sullom Voe Terminal and Port. It is recognised globally as a pioneering, world-class model of integrated coastal management based on its independent scientific monitoring and expert advice. www.soteag.org.uk and X: @SOTEAG!
- **Nature Analytics**: Fisheries consultancy team with focus on solution-generating science with application to real-world problems in fisheries management. Consultancy services include fisheries data analysis such as stock assessment and management strategy evaluation, creating interactive web applications and producing science communication materials. <https://natureanalytics.ca/>
- **ReSOW UK CEEDS tool** - The Sustainable Management of Marine Resources (SMR) funded Restoration of Seagrass for Ocean Wealth (ReSOW) UK project is committed to enhancing the management and restoration of seagrass for sustainable social, environmental and economic net gains. The Coastal Ecosystem Enhancement Decision Support (CEEDS) tool brings together data and reports from the project in a manner that is accessible and can be explored spatially to enable the integration of coastal restoration into sustainable marine management. <https://resow.uk/> and <https://noc.ac.uk/> @NOCnews

Day 3: Thursday 7th November 2024

This third day of the MASTS ASM is for associated meetings, seminars, training sessions and workshops.

- **Thursday breaks are: 10.30-11.30 for morning coffee, lunch is at 12.00-13.30 and afternoon coffee break is 15.00-15.45.**

One-day workshops (7th Nov):

- Conference Room 1 (1000-1500) - **Sustainable Management of UK Marine Resources – Project Showcase.**
- Conference Room 2 (1000-1600) – **Designing multiple driver experiments.** Organised by Prof. Sinéad Collins and Dr Matt Wale.
- Conference Room X (1030-1600) – **Filling knowledge gaps and identifying priorities for Blue Carbon.** Organised by Prof. William Austin and Prof Hilary Kennedy.
- Conference Room 8 (0930-1630) - **Finalising a Story Map on Climate Change Impacts around Scottish Deep Sea** (Invitation only)

Morning workshops (7th Nov):

- Conference Room 4/5 (11.30-13.30) – **Innovations in Sea Lice Monitoring.** Organised by Dr Helena Reinardy and Dr Thangavel Thevar.
- Conference Room 6 (09.00-12.30) – **Linking conservation/restoration projects with community empowerment.** Organised by Dr Karen Alexander and Prof William Sanderson.
- Conference Room 7 (09.00-12.00) – **Tracking top predators in marine renewable energy development areas.** Organised by Natalie Isaksson, Dr Gordon Hastie and Nicholas Petzinna.

Afternoon workshops (7th Nov):

- Conference Room 7 (13.30-16.30) – **Marine Data Management, Governance and the MEDIN toolset.** Organised by Roseanna Wright and Charlotte Miskin-Hymas.